In the Claims

1. (original) A probe for measuring tissue water content in a region of interest in the brain, the probe comprising:

an implantable tissue water content sensor having two plates with a proximal and distal end, the two plates being separated by a dielectric material and the distal end being implantable in brain tissue;

an impedance matching circuit coupled to the proximal end of one of the plates;

a first output terminal coupled to the matching circuit resistor and a second output terminal coupled to one of the plates;

a remotely positioned frequency spectrum analyzer receiving an output signal from the first and second output terminals; and

a digital computer having a display, the digital computer having an input coupled to the output signal from the water content probe and the spectrum analyzer, the computer programmed to display the resonant frequency of the sensor indicative of water content in the brain tissue.

2. (original) The probe of claim 1 wherein the two plates are coated with insulation material sufficient to provide DC isolation.

3. (original) The probe of claim 1 wherein the impedance matching circuit includes a resistor.

4. (original) The probe of claim 1 further comprising a coaxial cable having a core conductor coupled to the impedance matching circuit and a circumferential conductor

coupled to the proximal end of the other plate, the coaxial cable being coupled to the spectrum analyzer.

5. (original) The probe of claim 1 wherein the plates and the dielectric material have a series of transverse holes.

6. (original) The probe of claim 1 further comprising an intracranial pressure sensor located in substantially parallel orientation with the water content sensor and reading the pressure of the region of interest.

7. (original) The probe of claim 6 further comprising:

an analog to digital converter having an output and an input coupled to the intracranial pressure sensor; and

wherein the computer is coupled to the output of the analog to digital converter and is programmed to display simultaneous tracings of apparent water content pulsatility due to tissue perfusion and compression based on the signal from the spectrum analyzer and the intracranial pressure waveform.

8. (original) The probe of claim 6 further comprising a threaded, self-tapping bolt insertable within a skull aperture, the bolt having a first opening which allows stabilization and positioning of the water content sensor and a second opening which allows stabilization and position of the intracranial pressure sensor.

9. (original) The probe of claim 7 wherein the pressure sensor is a tissue-implanted strain gauge.

10. (original) The probe of claim 7 wherein the pressure sensor is a fiberoptic sensor.

11. (original) The probe of claim 7 further comprising:

a wireless transmitter coupled to the intracranial sensor and the water content sensor; and

a wireless receiver coupled to the digital computer, the receiver tuned to signals from the transmitter.

12. (original) The probe of claim 7 wherein the digital computer determines apparent water content pulsatility due to tissue perfusion and compression by plotting the change in standing wave ratio to the side of the return loss curve on the spectrum analyzer and determines where the standing wave ratio change is at a maximum.

13. (original) The probe of claim 7 further comprising an inductor coupled in parallel to the plates of the water content probe, and wherein the digital computer determines apparent water content pulsatility due to tissue perfusion and compression by plotting the center frequency resonance shift.

14. (original) The probe of claim 11 wherein the impedance matching and transmitter circuit components are an implantable component integrated circuit of the sensor probe.

15. (original) The probe of claim 1 wherein the plates are coupled to a shunt tube which serves as a ventrical drain from the region of interest.

Claims 16-42 (canceled): Please cancel claims 16-42 without prejudice

43. (original) A probe for measuring tissue water content in a region of interest in the brain, the probe comprising:

an implantable tissue water content sensor having two plates with a proximal and distal end, the two plates being separated by a dielectric material and the distal end being implantable in brain tissue;

a signal transmitting circuit coupled to the proximal end of one of the plates;

a signal receiver;

a remotely positioned frequency spectrum analyzer coupled to the signal receiver; and

a digital computer having a display, the digital computer having an input coupled to the output signal from the water content probe and the spectrum analyzer, the computer programmed to display the resonant frequency of the sensor indicative of water content in the brain tissue.

44. (original) The probe of claim 43 wherein the transmitter circuit includes an inductor and the signal receiver includes a second inductor wherein magnetic field energy is applied to the second inductor.